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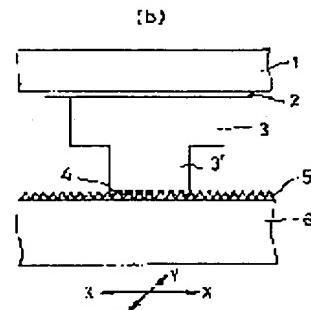
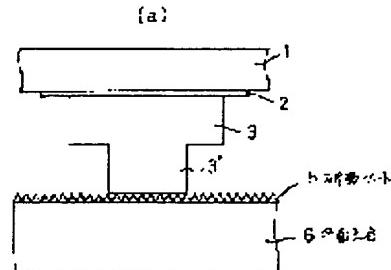
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(54) FORMING METHOD OF ROUGH SURFACED BUMP, PACKAGING METHOD OF SEMICONDUCTOR DEVICE HAVING THE BUMP AND SEMICONDUCTOR UNIT

(57) Abstract:

PURPOSE: To enable a semiconductor device and a circuit substrate to be electrically connected at fine pitch easily and in high reliability.

CONSTITUTION: A semiconductor device (IC substrate) 1 is arranged facedown on a plane base 5 with an abrasive sheet 5 having grinding particles to make a bump 3 abut against the abrasive sheet 5 so that the plane base 6 may be ultrasonic-oscillated on a plane in perpendicular direction to the press down direction of the semiconductor substrate 1 against the plane base 6 to form a rugged surface 4 on the end part of the bump 3. Through these procedures, the fine but rough surface 4 can be easily formed on the end part of the bump 3 with-drawing the restrictions by the structure, material quality and manufacturing method of the bump 3 thereby enabling an oxide film and impurities on the end part of the bump 3 to be eliminated for realizing the highly reliable electrical connection and the bond of adhesion. Furthermore, both of the bonding strength and the electrical continuity can be increased due to the increase in the connection surface area between the bump 3 and the input/output terminal electrodes.



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